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PATENT

In re application of:

Carr et al.

Application No.: 09/629,649

Filed: August 1, 2000

For: POSTAL METHODS AND SYSTEMS  
EMPLOYING DIGITAL  
WATERMARKS

Examiner: J. Patel

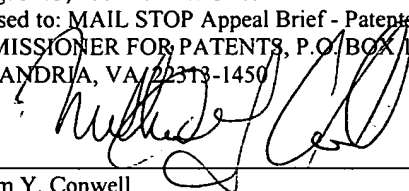
Date: August 13, 2004

Art Unit 2625

Confirmation No. 7630

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APPEAL BRIEF

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APPEAL BRIEF 09/629,649

I. REAL PARTY IN INTEREST .....	3
II. RELATED APPEALS AND INTERFERENCES.....	3
III. STATUS OF CLAIMS .....	3
IV. STATUS OF AMENDMENTS .....	3
V. SUMMARY OF THE INVENTION .....	3
VI. ISSUE .....	5
VII. GROUPING OF CLAIMS.....	5
VIII. ARGUMENT.....	6
IX. CONCLUSION.....	10

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**I. REAL PARTY IN INTEREST**

The real party in interest is Digimarc Corporation, by an assignment from the inventors recorded at Reel 11342, Frames 753-755, on November 27, 2000.

**II. RELATED APPEALS AND INTERFERENCES**

The assignee filed an appeal in application 09/689,289, which claims subject matter generally related to that of the present application (e.g., digital watermarks on envelopes). An appeal brief was filed in the '289 application in April, 2004, and prosecution was re-opened in July, 2004.

**III. STATUS OF CLAIMS**

Claims 6 and 8-11 stand finally rejected and are appealed. Claims 7 and 19 are allowed. Claims 1-5 and 12-18 are canceled.

**IV. STATUS OF AMENDMENTS**

All earlier-filed amendments have been entered.

**V. SUMMARY OF THE INVENTION**

The present invention relates to use of digital watermark technology to increase the security of, and augment the functionality associated with, computer printing of envelopes and postage.<sup>1</sup>

According to one aspect, applicants' invention comprises an envelope having a fragile digital watermark encoded thereon. The watermark represents plural bits of digital data, and is designed to evidence reproduction by scanning/printing.<sup>2</sup>

As noted in the specification, digital watermarking technology (also known as steganography) encompasses a great variety of techniques by which plural bits of digital data are

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<sup>1</sup> See, e.g., Specification, page 1, lines 25-27.

<sup>2</sup> See, e.g., Specification, page 2, lines 8-13.

hidden in some other object, without leaving human-apparent evidence of alteration or data representation.<sup>3</sup>

Digital watermarking of envelopes can be effected in numerous ways, including by ink (e.g., speckling to form a seemingly uniform tint), by pressure (e.g., texturing to change the surface micro-topology of the paper), etc. The digital watermarking can be formed as part of other markings on the envelope (e.g., franking marks, graphics, text, etc.), or can be applied irrespective of such other markings.<sup>4</sup>

The digital watermarking may span all of one side (or both sides) of an envelope, or may be localized, e.g., in the areas typically associated with postage, return address, and recipient address. An envelope may convey a single digital watermark, or several may be used, e.g., conveying different information or serving different purposes in different regions. Several different digital watermarking technologies can be employed on a single envelope, e.g., the envelope's texture can convey one type of information, and tinting printed by ink on the envelope can convey a second type of information. Moreover, both the front and back of the envelope can be encoded – either with the same watermark information or different. The digital watermark may be formed in an otherwise blank area, or can be integrated into other graphics, such as advertising artwork, corporate logos, etc.<sup>5</sup>

Particular digital watermarking technologies are not belabored in the specification, but are taught in patent documents incorporated-by-reference in the specification.<sup>6</sup>

A “fragile” digital watermark is one designed to evidence copying, e.g., by not surviving, or by having attributes that change in a detectable manner during the scanning/printing operations associated with copying.<sup>7</sup> Particular fragile digital watermarking technologies are again detailed in patent documents incorporated by reference.<sup>8</sup>

Thus, this first aspect of the invention provides a deterrent to unauthorized reproduction of postal indicia. If markings on an envelope (e.g., legitimate franking indicia) that incorporate

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<sup>3</sup> See, e.g., Specification, page 3, lines 16-18.

<sup>4</sup> See, e.g., Specification, page 3, lines 19-24.

<sup>5</sup> See, e.g., Specification, page 3, line 29 through page 4, line 9.

<sup>6</sup> See, e.g., Specification, page 4, lines 11-13; page 11, lines 7-9.

<sup>7</sup> See, e.g., Specification, page 5, lines 28-30.

<sup>8</sup> See, e.g., Specification, page 6, lines 1-2.

such a fragile digital watermark are photocopied or otherwise reproduced from one envelope onto a second envelope, the copy will either not include the watermark or the watermark will be changed in a way that indicates it is a copy. Processing equipment in the postal system can be alert to such copies (which are identified by the absence or modification of the fragile watermark), and cull them from the properly-franked mail. Likewise, fraud or counterfeit investigators can use special readers to verify originality and detect copies.

According to a second aspect, the invention comprises an envelope having steganographically encoded thereon a digital watermark that represents postage.<sup>9</sup> Again, this digital watermark can be effected in various ways, including by printing (e.g., either with conventional ink, or ink designed for sensing in the ultraviolet or infrared spectrum) or by texturing.<sup>10</sup>

## **VI. ISSUE**

Did the Office establish *prima facie* obviousness of claims 6 and 8-11 over Kara (5,717,597), Rhoads (WO96/36163) and Ramsay (5,502,576), when (a) the art fails to teach that for which it is cited; (b) the references therefore cannot be combined to yield the claimed arrangements; and (c) the proposed modification and combination of the art proceeds in accordance with the Examiner's hindsight and applicants' specification, rather than a suggestion in the art.

## **VII. GROUPING OF CLAIMS**

Claim 9 stands or falls with claim 8. Each of the other claims is separately patentable, as detailed below.

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<sup>9</sup> See, e.g., Specification, page 8, lines 6-20.

<sup>10</sup> See, e.g., Specification, page 5, lines 9-15.

### VIII. ARGUMENT

Claims 6 and 8-11 stand rejected over Kara (5,717,597) in view of Rhoads (WO 96/36163) and Ramsay (5,502,576).

Kara teaches E-Stamp's system for printing personalized, machine-readable postage indicia on greeting cards.<sup>11</sup>

(Kara has certain teachings concerning encryption of the data represented in the machine-readable postal indicia.<sup>12</sup> Encryption and watermarking, however, should not be confused. As noted, watermarks convey plural-bit information without leaving human-apparent evidence of alteration or data representation.<sup>13</sup> Kara's encrypted indicia, in contrast, indicates to all that some data is thereby represented.)

As stated by the Examiner, Kara does not teach a fragile digital watermark representing plural bits of digital data to evidence scanning and printing.<sup>14</sup>

In characterizing Rhoads, the Action states:

In the same field of endeavor, however, Rhoads discloses digital watermark representing plural bits of digital data (see Rhoads pages 20 and 101) being applied as a tags to a mail item surface.<sup>15</sup>

Applicants agree that "Rhoads discloses digital watermark representing plural bits of digital data.

However, contrary to the Examiner's statement, Rhoads is not in the same field of endeavor as Kara (*i.e.*, printing of personalized postage indicia).

Because the obviousness rejection is premised on a factually mistaken view of the art to which Rhoads relates, a *prima facie* showing under § 103 has not been presented in the Final Action. Accordingly, the rejection of claims 6 and 8-11 premised thereon must be reversed.

Moreover - and again contrary to the Examiner's statement in the Action - Rhoads'

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<sup>11</sup> U.S. Patent 5,717,597, title, abstract.

<sup>12</sup> U.S. Patent 5,717,597, abstract.

<sup>13</sup> See, e.g., Specification, page 3, lines 16-18.

<sup>14</sup> March 9, 2004, Final Rejection, page 4, first full paragraph.

<sup>15</sup> March 9, 2004, Final Rejection, page 4, second full paragraph.

digital watermark is not “applied as tags to a mail item surface.”

The Examiner did not cite a particular passage from Rhoads to support the alleged “applied as tags to a mail item surface.” There is no reference in Rhoads to mail, to watermarked envelopes, or to other mail items.<sup>16</sup>

Again, because Rhoads does not contain the teaching on which the obviousness rejection is premised, a *prima facie* showing under § 103 has not been established, and the rejection of claims 6 and 8-11 must be reversed.

Still further, the rejection also relies on Ramsay, which details a system for the storage and management of documents in the electronic domain.

The Action particularly cites Ramsay for allegedly showing “*document processing system comprising fragile watermark on the document (column 8, lines 35-50) designed to evidence reproduction by scanning and printing.*”

Again, however, applicants respectfully submit that Ramsay does not teach the subject matter for which it is cited.

The cited Ramsay excerpt teaches that an original document can include a watermark. But the watermark contemplated by Ramsay is apparently of the conventional type (e.g., created during the papermaking process) – not a digital watermark as specified by claims 6 and 8-11.

In particular, the cited Ramsay excerpt reads:

In addition, the 8-bit grayscale electronic image will contain background details such as security paper patterns, watermarks, illegible color inks, markings that are faded or too faint to be perceived by viewing the original source document, as well as creases, smudges, stains, and other unique identifying details that assure far greater certainty when verifying the integrity and authenticity of the electronic image, far exceeding the currently accepted standards for duplicates of financial, business, and legal records. The use of 8-bit grayscale also permits

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<sup>16</sup> In support of the “plural bits of digital data” teaching of Rhoads, the Action cited Rhoads at pages 20 and 101.

Page 20 states that Rhoads’ encoded signal can be distributed in various ways, “*including converted to printed image form, stored on magnetic media (floppy diskette, analog or DAT tape, etc.), CD-ROM, etc., etc.*” However, this is not understood to teach applying a watermark “as tags to a mail item surface,” as stated in the Action.

Page 101 states that Rhoads’ technology also finds applications in business cards (i.e., carrying a photograph having unobtrusive, machine readable contact data embedded therein), merchandise marking (e.g., encoding of merchandise labels), and medical records. Again, however, this page is not understood to teach applying a watermark “as tags to a mail item surface,” as stated in the Action.

the capture of electronic images from damaged or aged tangible source documents such as burnt papers or faded microfiche that could not be reproduced by other means, and which may be accomplished as if the original source documents were undamaged.

(Emphasis added.)

Nothing here indicates that Ramsay was contemplating a digital watermark, i.e., an encoding of plural bits of digital data without leaving human-apparent evidence of alteration or data representation.

Moreover, the watermark mentioned in Ramsay is not understood to function “to evidence reproduction by scanning and printing,” as recited in claim 6. Rather, as indicated by the cited excerpt, the Ramsay watermark – like the cited creases, smudges and other markings – is employed for a different purpose: to help assure the integrity and authenticity of an electronic image.

Thus, the teachings of Ramsay – like Rhoads – are factually misstated in the Final Rejection. Reliance on such factual errors fatally flaws the rejection, so that it fails to meet the *prima facie* burden placed on the Office. The rejection must again be reversed.

Since the art fails to teach that for which it is cited, the proposed combination of art fails to include the required elements of applicants’ claimed combinations.

(The Action seems confused about the alleged teachings of Rhoads and Ramsay. In addition to its incorrect assertion about a Rhoads’ watermark “being applied as a tags to a mail item surface,” an odd reference to Rhoads also appears in a sentence about Ramsay’s teaching. The Action states:

...Ramsay discloses a document processing system comprising fragile watermark on the document (see Ramsay, column 8, lines 35-50) designed to evidence reproduction by scanning and printing (see Rhoads, pages 67-68).<sup>17</sup>

It is not clear why Rhoads is cited to evidence a teaching alleged to be contained in Ramsay. The Examiner’s first Action cited Ramsay Fig. 3 where Rhoads is now cited.<sup>18</sup>)

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<sup>17</sup> March 9, 2004, Final Rejection, page 4, second full paragraph.

<sup>18</sup> August 19, 2003 Action, page 6, second full paragraph.



In addition to the foregoing, none of the art teaches or suggests an envelope having steganographically encoded thereon a digital watermark representing postage, as required by claim 8.

Regarding claims 9 and 10, as acknowledged by the Examiner, Kara does not teach any steganographic encoding. Accordingly, Kara's teachings concerning "printing" of his encrypted indicia is not understood to teach a particular form of steganographic encoding.

Claim 11 concerns texturing the surface of an envelope. The Final Action does not appear to have addressed this limitation.

Even if the Examiner had not erred by citing references for teachings that they do not contain, the references still could not be combined to yield the claimed combinations. Rhoads does not relate to postage, or envelopes. (Nor does Ramsay.) There is no suggestion in any of the art that would have led an artisan to abandon the postage indicia taught by Kara, and substitute the digital watermark of Rhoads. The Examiner's proposals to the contrary are motivated by hindsight, inspired by applicants' own specification, rather than suggested by any cognizable teaching in the art.

Still further, the Examiner's stated rationale for the proposed combinations is ill-founded. Treating all of the rejected claims as a group, the Examiner argues:

Therefor, it would have been obvious ... because Rhoads and Ramsay provide Kara with a most interactive, secured and hybrid document processing system. Such hybrid document processing system would greatly benefit Kara by providing advantages associated with analog and digital document processing (scanning, printing, transmission and storage).

It is not clear what is meant by "a most interactive, secured and hybrid document processing system." Nor is it clear what is meant by "providing advantages associated with analog and digital document processing (scanning, printing, transmission and storage)."

These statements seem to be the Examiner's view of advantages resulting from his proposed combination – circularly offered as a rationale justifying the combination. This is impermissible hindsight.

Whatever was intended, the stated rationale does not justify the selective jig-sawing of disparate elements from Kara, Rhoads and Ramsay – with the discarding of various other elements, in an attempt to yield the claimed combinations.

Still further, the “advantages” cited by the Examiner are different than those sought by the present invention (e.g., applicants noted their ambition to deter unauthorized reproduction of postal indicia by photocopying,<sup>19</sup> and to provide envelope franking without a conspicuous data carrying indicia<sup>20</sup>). None of these appears to motivate, or result from, the Examiner’s proposed combinations.

**IX. CONCLUSION**

The burden is on the Examiner to establish a *prima facie* case of obviousness. The Final Rejection failed on several grounds to meet that burden. The rejections of claims 6 and 8-11 should be reversed, and all pending claims passed to issuance.

Date: August 13, 2004

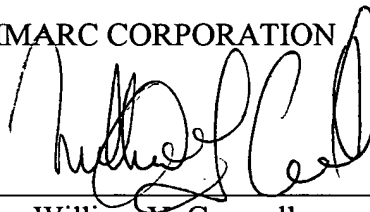
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Respectfully submitted,

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<sup>19</sup> See, e.g., Specification, page 2, lines 6-13; page 6, lines 2-9.

<sup>20</sup> See, e.g., Specification, page 2, lines 20-22; page 3, lines 16-18; page 8, lines 6-27.

APPENDIX A  
PENDING CLAIMS

1-5. (Canceled)

6. An envelope having encoded thereon a fragile digital watermark representing plural bits of digital data, said watermark being designed to evidence reproduction by scanning and printing.

7: (Allowed) An envelope having encoded thereon a machine readable indicia that indicates, to suitably equipped devices, that image data corresponding to said envelope should not be reproduced.

8. An envelope having steganographically encoded thereon a digital watermark representing postage.

9. The envelope of claim 8 in which the steganographic encoding takes the form of printing on said envelope.

10. The envelope of claim 9 in which said printing is with an ink designed for sensing in the ultraviolet or infrared spectra.

11. The envelope of claim 8 in which said encoding takes the form of texturing on the surface of said envelope.

12-18. (Canceled)

19. (Allowed) An envelope having formed thereon two machine readable indicia, a first of said indicia being a franking mark applied by a first party, the second of said indicia conveying data associated with an authorized user of said envelope, the first and second indicia cooperating to confirm that use of said envelope by the first party is authorized.